

Claims:

1. — A method of generating halftone threshold matrix data for an image printer, said method comprising the steps of:

5 — taking a stored high bit content halftone matrix data;

10 — reducing said high bit content halftone matrix data to a relatively lower bit content halftone matrix data, within said image printer, wherein said step of reduction comprises incorporating a printer response correction function into said relatively low bit content halftone matrix data.

2. — An image printer configured to operate according to the method as claimed in claim 1.

15 3. — A method of generating a halftone matrix data having a predetermined response of number of dots printed as a function of digital input value, said method characterized by comprising the steps of:

20 — storing data describing a plurality of data elements as a plurality of vector entries, each said vector entry comprising an index number corresponding to a higher bit content per element halftone threshold level, an X coordinate data corresponding to a position in a first dimension, and a Y coordinate data corresponding to a position of said entry in a second dimension, said X and Y coordinate data positioning said index number in a two dimensional plane;

25 — storing a tone correction data as a list of numbers (401);

— sequencing through said list of numbers (1001) and for each said number of said list, assigning a halftone threshold level to a corresponding number of said

vector entries, wherein for each said number of said list, a different said halftone threshold value is assigned; and

5 generating (504) a lower bit content per element two dimensional halftone threshold level matrix (402) from said plurality of vector entries and their corresponding respective assigned halftone threshold levels.

10 4. The method as claimed in claim 3, characterized in that said step of generating a two dimensional halftone threshold level matrix comprises:

for each said vector data entry, storing a threshold level data assigned to said index value in a position within said two dimensional halftone threshold level matrix corresponding to said X and Y coordinates of said vector data entry.

15 5. A method of generating halftone threshold data for an image printing system, said method characterized by comprising the steps of:

storing a higher bit content threshold level data (600), comprising a plurality of individual threshold level elements;

20 converting (500) said higher bit content threshold level data into at least one level vector, said level vector (400) comprising a plurality of vector data entries each of an index value number representing a high bit content level value of a halftone threshold level value, and a corresponding coordinate of said threshold
25 level value;

applying (502) a tone correction function by specifying a number of said vector data entries to be selected;

selecting said number of vector data entries from said plurality of vector data entries in said level vector, said selected plurality of vector data entries having highest index numbers, corresponding to highest threshold level numbers of said plurality of vector data entries; and

5

transforming (504) said plurality of selected vector data entries into a lower bit content two dimensional threshold data.

6. The method as claimed in claim 5, wherein said high bit content threshold level data 600 comprises a matrix having 16 bits per element.

10

7. The method as claimed in claim 5, wherein said low bit content threshold data (402) comprises a plurality of elements each having 8 bits per element.

15

8. The method as claimed in claim 5, wherein said high bit content threshold level data comprises a plurality of two-dimensional planes, wherein one said plane is provided per each color of an image to be printed.

20

9. A method of applying a correction to image data to correct for a printer response characteristic, said method comprising the steps of:

generating a correction characteristic to correct for a response of said printer device;

25

applying said correction characteristic to a relatively high bit content half tone matrix data, to obtain a relatively low bit content half tone matrix data corrected for said printer response; and

-26-

processing said image data using said relatively low bit content half tone matrix data.

10. The method as claimed in claim 9, wherein said step of generating a
5 correction characteristic is carried out automatically by said printer device.

11. The method as claimed in claim 10, wherein said correction
characteristic is generated dynamically, and applied to said relatively high bit
content half tone matrix in vector format.

10

09915447-072201
FOI 2020-2451660